Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHISHIRO TANABE
and
YUJI YAMAGUCHI

Appeal No. 1999-1835
Application No. 08/654,976

HEARD: November 27, 2001

Before KIMLIN, OWENS, and DELMENDO, Administrative Patent Judges.

DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 5 through 8, 10, 13, 15, 16, and 18 in the above-identified application.[1] Claim 19,

[1] In reply to the final Office action, the appellants submitted an amendment under 37 CFR § 1.116 (1981) on July 1, 1998 (paper 13), proposing the cancellation of claims 14 and 17 and changes to claims 8, 13, 15, and 18. The examiner has entered this amendment for purposes of this appeal. (Advisory action of July 14, 1998, paper 14.)

which is the only other pending claim, has been allowed.

(Appeal brief, page 1; examiner's answer, page 2.)

The subject matter on appeal relates to a studless pneumatic tire. Regarding the appealed subject matter, the appellants allege:

> An object of the embodiments of the invention is to provide a studless pneumatic tire which maintains the stiffness of island portions even when many sipes are formed, thereby providing improved driving stability and performance of the tire on icy roads while preventing island portions from being chipped.

(Appeal brief, page 2.) Further details of this appealed subject matter are recited in illustrative claims 5, 8, 10, and 13 reproduced below:

> 5. A studless pneumatic tire having a plurality of block-shaped island portions formed on a cylindrical tread extending between a pair of sidewalls, said island portions having laterally extending sipes and being separated by a plurality of main grooves extending in the circumferential direction as well as by many lug grooves, wherein each island portion comprises:
>
> a first sipe which has an extension segment extending from a first lateral end of said island portion facing a first main groove and traversing a first edge region and a central region of said island portion in a substantially axial direction, and a return segment whose tip is turned back at a second interface between the central region and a second edge region or in the vicinity thereof and which is terminated within the central region of said island portion; and
>
> a second sipe which has an extension segment extending from a second lateral end of said island portion facing a second main groove and traversing the

second edge region and the central region of said island portion in a substantially axial direction, and a return segment whose tip is turned back at a first interface between the central region and the first edge region or in the vicinity thereof and which is terminated within the central region of said island portion;

whereby said first and second sipes divide the central region of said island portion into a large number of island elements compared to the edge regions thereof.

8. A studless pneumatic tire in which a plurality of block-shaped island portions each having sipes are provided on a cylindrical tread extending between a pair of annular sidewalls, wherein

said tread has at least two rubber layers having different hardnesses, and

the tread has at least one area having soft rubber and hard rubber and including sipes, the tread has at least one other area having soft rubber and hard rubber and including sipes, the density of the sipes in the at least one area is larger than the density of the sipes in the at least one other area, the density of the sipes being defined as a total projected length of portions of the sipes within an area, the ratio of the volume of hard rubber to the volume of soft rubber in the at least one area is larger than the ratio of the volume of hard rubber to the volume of the soft rubber in the at least one other area.

10. A studless pneumatic tire according to Claim 8, where each island portion comprises:

a first sipe which has an extension segment extending from a first lateral end of said island portion and traversing a first edge region and a central region of said island portion in a substantially axial direction, and a return segment, one end of said return segment being turned back at a second interface between the central region and a second edge region adjacent to a second lateral end or in the vicinity thereof and the other end of said return segment being terminated within the central

region; and

a second sipe which has an extension segment extending from a second lateral end of said island portion and traversing the second edge region and a central region of said island portion in the substantially axial direction, and a return segment, one end of said return segment being turned back at a first interface between the central region and the first edge region adjacent to the first lateral end or in the vicinity thereof and the other end of said return segment being terminated within the central region.

13. A pneumatic tire having a block pattern having a plurality of block-shaped island portions, which are divided by main grooves extending in the circumferential direction of said tire and lug grooves extending in the widthwise direction of said tire, said tire manufactured by vulcanizing molding including a step of using a mold that comprises at least one blade for forming at least one lateral sipe in each block-shaped island portion, the at least one blade extending in the widthwise direction of said tire at a substantially uniform depth to form a lateral sipe at a substantially uniform depth that extends from a lateral edge of the block-shaped island portion and ends prior to reaching the opposite lateral edge of the block-shaped island portion, each blade having at least one bent portion and having a flask-shaped cross section at a portion corresponding to the bottom of a corresponding sipe.

The examiner relies on the following prior art references as evidence of unpatentability:

Benson et al. (Benson)	3,012,599	Dec. 12, 1961
Yamaguchi et al. (Yamaguchi)	5,176,765	Jan. 5, 1993
Matsushita (JP '712)(published JP patent document)	62-241712	Oct. 22, 1987

Nakamura (JP '108)(published JP patent document)	2-310108	Dec. 25, 1990
Hamazaki (JP '723)(published JP patent document)	3-169723	Jul. 23, 1991
Ito (JP '917)(published JP patent document)	5-169917	Jul. 9, 1993

The claims on appeal stand rejected as follows:[2]

I. claim 8 under 35 U.S.C. § 102(b) as anticipated by Yamaguchi (examiner's answer, pages 4-6);

II. claim 8 under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of Yamaguchi and JP '723 (id. at pages 7-8);

III. claims 5 through 7 under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of Yamaguchi and Benson (id. at pages 8-11);

IV. claim 10 under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of Yamaguchi, Benson, and JP '723 (id, at pages 11-12);

V. claims 13 and 15 under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of JP '108, JP '712, and Yamaguchi (id. at pages 12-14); and

[2] The rejection under 35 U.S.C. § 112, second paragraph, of claims 8, 10, and 13 through 18 as set out in the final Office

VI. claims 13, 15, 16, and 18 under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of JP '917, JP '712, and Yamaguchi (id. at pages 14-16).

We affirm rejections I, II, V, and VI but reverse rejections III and IV.[3] Our discussion follows.[4]

I. Rejection of Claim 8 under 35 U.S.C. § 102(b) over Yamaguchi

We start with the claim language. Gechter v. Davidson, 116 F.3d 1454, 1457, 1460 n.3, 43 USPQ2d 1030, 1032, 1035 n.3 (Fed. Cir. 1997); In re Paulsen, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). In proceedings before the U.S. Patent and Trademark Office (PTO), claims must be interpreted by giving words their broadest reasonable meanings in their ordinary usage, taking into account the written description found in the

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action (p. 2) has been withdrawn. (Advisory action of July 14, 1998.)

[3] The appellants submit that the appealed claims should be grouped and considered separately as follows: (I) claims 5-7; (II) claim 8; (III) claim 10; (IV) claims 13 and 15; and (V) claims 16 and 18. (Appeal brief, p. 18.) With respect to claim 16, however, the appeal brief does not contain any argument as to why claim 16 is separately patentable. Accordingly, we select claims 5, 8, 10, and 13 and decide this appeal as to the examiner's grounds of rejection on the bases of these claims only. See 37 CFR § 1.192(c)(7) (1997).

[4] Our references to the Japanese patent documents are to the English language translations found in the record.

specification. In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997)("[T]he PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification."); In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow."). Thus, absent an express definition for a disputed term, it is appropriate to give the term its broadest reasonable meaning in its ordinary usage. Morris, 127 F.3d at 1056, 44 USPQ2d at 1029.

Applying these principles, we note that appealed claim 8 recites the term "area." The specification, however, does not include an express definition for the term "area." Accordingly, we give this term its broadest reasonable meaning in its ordinary usage. That is, we construe the term "area" to mean, in its present context, any part of the tire tread without any limitation with respect to the size of the area or the precise location of the area. Our interpretation is consistent with the

present specification (e.g., page 7, line 24 to page 8, line 20), which does not limit the ordinary meaning of the term "area" in any way.

We next turn to the teachings of Yamaguchi. Yamaguchi describes a studless pneumatic tire comprising: (i) a tread portion (3) composed of at least two rubber layers having different hardnesses, wherein the two layers are designated as a "radially outward arranged outer rubber layer (3A)" and a "radially inward arranged inner rubber layer (3B)"; (ii) a plurality of lateral grooves (10) on the tread (3); (iii) circumferential grooves (11A) and (11B) forming block-shaped land portions (12); and (iv) sipes (15) arranged in a lateral direction on the land portions (12). (Abstract; column 1, lines 23-27, 52-68; column 3, lines 50-65; column 6, line 29 to column 7, line 3; Figures 1 and 2.) As correctly pointed out by the examiner (examiner's answer, page 4), Yamaguchi's Figure 2 clearly shows that the inner rubber layer (3B) protrudes or "invades" into the outer rubber layer (3A) of the tread. Further, the examiner correctly found (id. at page 5) that in the "second and fourth block rows [columns] (the intermediate block rows [columns])," the sipes are provided in an overlapping arrangement. (Figure 1.)

The examiner's basic position is succinctly stated as follows:

> In claim 8, "the density of sipes in the at least one area is larger than the density of sipes in the at least one other area" reads on the arrangement of sipes disclosed by Yamaguchi et al in each block for the second and fourth block rows since a circumferential line passing through a central area (this area having more hard rubber due to the hard inner rubber layer 3B "invading" into the soft outer rubber layer) crosses four sipes whereas a circumferential line in another area at an edge region (this line having less hard rubber since the side wall of the block is mainly composed of the soft rubber) crosses two sipes.

(Id. at page 6.) We agree.

As we discussed at the outset, the term "area," in its broadest reasonable meaning, encompasses any area without any limitation to its size or precise location. Under these circumstances, we uphold the examiner's determination that Yamaguchi describes each and every limitation recited in appealed claim 8.

The appellants argue as follows:

> The '765 patent [Yamaguchi] does not disclose that, in the second and fourth rows of blocks shown in Fig. 1, the ratio of the volume of hard rubber to soft rubber is higher in the central region than in the side region. Specifically, Fig. 2 of the '765 patent is a cross-sectional view taken along plane II of Fig. 1. Only a side region of each of the second and fourth rows of blocks is actually represented in Fig. 2, i.e., a left side region of the second row of blocks and a right side region of the fourth row of

> blocks, from left to right. Thus, even though more sipes may extend in the central region of the second and fourth rows of blocks as shown in Fig. 1 of the '765 patent, Fig. 2 does not show that more hard rubber is disposed in the central region than at the side regions of the these [sic] blocks.

(Appeal brief, pages 21-22.)

We, like the examiner (examiner's answer, pages 6 and 16), are not persuaded by the appellants' argument. On this point, we note that circumferential groove (11A), which defines the right edge of the second column of blocks in Figure 1, is shown as being immediately to the right of rubber layers (3A) and (3B) in Figure 2. But even if the appellants were correct in stating that "[o]nly a side region of each of the second and fourth rows [columns] of blocks is actually represented in Fig. 2," we again point out that the term "area" is not limited to any particular portion of the blocks shown in Figure 2.

The appellants urge that Yamaguchi does not provide the advantages of the invention recited in appealed claim 8. (Appeal brief, pages 22-23.) However, we agree with the examiner's analysis that evidence of secondary considerations of nonobviousness, such as unexpected results, cannot overcome an anticipation rejection under 35 U.S.C. § 102. Cf. In re Malagari, 499 F.2d 1297, 1302, 182 USPQ 549, 553 (CCPA

1974)(holding that an anticipation rejection "cannot be overcome by evidence of unexpected results or teachings away in the art."). Moreover, the appellants have not supported their allegation with any objective evidence of nonobviousness commensurate in scope with claim 8.

The appellants contend: "[T]he '765 patent [Yamaguchi] does not discuss any reasons for providing the structure that the Examiner's Answer asserts is disclosed." (Reply brief, page 3.) However, the appellants do not cite to any language in 35 U.S.C. § 102(b) or other legal authority that would support the notion that a prior art reference cannot anticipate a claim unless the reference discusses a reason for providing the anticipating structure.

For these reasons, we uphold the examiner's 35 U.S.C. § 102(b) rejection of appealed claim 8 as anticipated by Yamaguchi.

II. Rejection of Claim 8 under 35 U.S.C. § 103 over the Combined Teachings of Yamaguchi and JP '723

Concerning the 35 U.S.C. § 103 rejection of claim 8 as obvious over the combined teachings of Yamaguchi and JP '723, we also uphold this rejection because anticipation is the epitome

or ultimate of obviousness. Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 716, 223 USPQ 1264, 1271 (Fed. Cir. 1984).

III. Rejection of claims 5-7 under 35 U.S.C. § 103 over the Combined Teachings of Yamaguchi and Benson

The examiner acknowledges that Yamaguchi does not describe the first and second sipes as recited in appealed claims 5 through 7. (Examiner's answer, page 9.) To account for these differences, the examiner relies on Benson. According to the examiner (id.), "Benson suggests to one of ordinary skill in the art to use hook shaped slots which have both lateral and circumferential components for the advantage of reducing tear out of tread material (loss of tread material between the slots)." (Id.)

The appellants, on the other hand, argue as follows:

> [T]he disclosure of the '599 patent [Benson] that providing hook shaped slots 10 in continuous rows of ribs 11 to reduce the tendency for tear out is insufficient to provide the requisite motivation since the continuous rows of ribs 11 are entirely different structures, and are subject to different forces and stresses, than the land portions 12 of the '765 patent [Yamaguchi].

(Appeal brief, page 26.)

> The examiner counters as follows:
>
> Appellant's [sic] argument that Benson et al uses ribs instead of blocks are [sic, is] not persuasive since each of blocks of Yamaguchi et al and ribs of Benson are raised tread elements...[On]e of ordinary skill in the art would readily expect to the both [sic] the sipes tread of Yamaguchi et al and the slots Benson to be subjected to "centrifugal and tractive forces" since (1) the tread of each of Yamaguchi et al and Benson et al are provided as part of a tire which in its intended use rotates on the ground and (2) the sipes in Yamaguchi et al and the slots of Benson are narrow width recesses which extend across a portion of a land portion.

(Examiner's answer, pages 18-19.)

As discussed by the appellants (reply brief, page 5), we do not think that the examiner's observations that the blocks and ribs of the two references are both raised, rotate on the ground, and have narrow width recesses are sufficient to establish the requisite motivation, suggestion, or teaching to combine the two references in the manner as suggested by the examiner. Here, the appellants have challenged the very foundation of the examiner's position by asserting that tires having ribs, as in Benson, are subject to completely different forces and stresses relative to tires having island block portions, as in Yamaguchi. Under these circumstances, it was incumbent upon the examiner to supply acceptable reasoning or evidence that would indicate that tires having ribs and tires

having island block portions are in fact subjected to the same forces and stresses. The examiner did not do so. In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984)(explaining that the initial burden of establishing a prima facie case of obviousness rests on the examiner).

For these reasons, we hold that the examiner has not made out a prima facie case of obviousness within the meaning of 35 U.S.C. § 103.

IV. Rejection of Claim 10 under 35 U.S.C. § 103 over the Combined Teachings of Yamaguchi, Benson, and JP '723

As in Rejection III, the examiner relies on Benson to account for the particular form of the first and second sipes as recited in appealed claim 10. For the reasons discussed above, however, we determine that the evidence in this record is insufficient to support a conclusion that one of ordinary skill in the art would have been led to combine Yamaguchi and Benson in the manner as suggested by the examiner.

JP '723 does not make up for the differences between Yamaguchi and appealed claim 10, because JP '723 does not teach sipes having the forms recited in appealed claim 10. (Figure 2.)

V. Rejection of Claims 13 and 15 under 35 U.S.C. § 103 over the Combined Teachings of JP '108, JP '712, and Yamaguchi

The examiner found:

> Japan '108 discloses a pneumatic tire, which one of ordinary skill in the art would readily understand as being vulcanized as all pneumatic tires are, having blocks which are defined by circumferential grooves and lateral grooves wherein each block contains plural sipes. In figure 8, Japan '108 shows each sipe as having a bent portion. In figures 2 and 6, Japan '108 shows each sipe as having a "flask shaped" enlarged portion at the bottom thereof. Japan '108 substantially discloses the claimed tire except for the sipe terminating the [sic] in the block instead of being open at both ends.

(Examiner's answer, page 12.) JP '108 also teaches that a "semi-open type" sipe in which only one end is connected to a peripheral [circumferential] groove is known in the art. (Page 4.) JP '108 further teaches as follows:

> [T]he inventors of this invention studied hard; as a result, they discovered that, by leaving at least one end of the sipe open to a side surface of the tire peripheral groove or the buttress part, and by placing a narrow groove whose at least one end is open to the side surface of the peripheral groove on the inner side surface of the sipe, the water can be drained through the narrow groove on the inner side of the sipe even when the sipe is closed when touching the ground, which drastically increases the draining effect.

(Page 6; underlining added.)

Given the teachings of JP '108, we concur with the examiner that one of ordinary skill in the art would have found it prima

facie obvious to provide a sipe having only one end open to a side surface of the circumferential groove in JP '108 as expressly suggested in JP '108. That is, when the sipe of JP '108 has only one end open to a side surface of a circumferential groove, the sipe would be "at a substantially uniform depth that extends from a lateral edge of the block-shaped island portion and ends prior to reaching the opposite lateral edge of the block-shaped island portion" as recited in appealed claim 13. Although JP '108 does not describe the tire manufacturing process, the appealed claims are directed to a tire and not a process. In re Thorpe, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985).

We need not discuss JP '712 and Yamaguchi because they are cumulative to JP '108.

The appellants argue that the invention recited in appealed claim 13 prevents a blade of a mold from bending during vulcanizing molding and provides a tire having good on-ice performance. (Appeal brief, page 29.) Also, it is said that the invention "enhances both wear resistance against partial wear and dry driving stability." However, the appellants have not specifically pointed to any objective evidence, which is commensurate in scope with the claims and which is sufficient to

establish any secondary consideration of nonobviousness. Nor have they presented any objective evidence to establish that the tire of JP '108, or any other applied prior art, is incapable of providing the same advantages. In re Geisler, 116 F.3d 1465, 1470, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997).

The appellants further contend that the applied prior art does not disclose a tire manufactured by vulcanizing molding using a mold. (Appeal brief, page 29.) However, the appellants do not dispute the examiner's assertion that pneumatic tires are manufactured by vulcanizing molding. Hence, we see no reason why one of ordinary skill in the art would not have used vulcanizing molding to manufacture the tire described in JP '108.

The appellants argue that "JP 108 does not disclose that the bent sipes shown in Fig. 8 are provided to increase the strength of the blade that forms them." (Appeal brief, page 30.) But the mere fact that JP '108 may not disclose the same reason for providing bent sipes as in the present invention does not defeat the examiner's prima facie of obviousness. It is sufficient that JP '108 describes a tire having bent sipes.

Moreover, the motivation provided in the prior art does not have to be the same as that of the appellants. In re Kemps, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996).

VI. Rejection of Claims 13, 15, 16, and 18 under 35 U.S.C. § 103 over the Combined Teachings of JP '917, JP '712, and Yamaguchi

The examiner found:

> Japan '917, directed to a pneumatic tire which one of ordinary skill in the art would readily understand as being vulcanized as all pneumatic tires are, discloses a pneumatic tire having blocks which are defined by circumferential grooves and lateral grooves wherein each block contains plural sipes. In figure 1, Japan '917 shows each sipe as having a bent portion. In figures 2-6, Japan '917 shows two different embodiments. In each of these embodiments, each sipe has an enlarged portion at the bottom thereof. The shape of the enlarged portion ("flask shaped portion") can be best seen in figures 7 and 8. The enlarged portion is "divided" at the bent portion. For example, see figure 2 and figure 3 and figure 4.

(Examiner's answer, page 14.) The examiner further found that JP '712 teaches "a sipe in a block of a pneumatic tire wherein (1) the sipe comprises a 'flask shaped' enlarged bottom portion and (2) the sipe has an end terminating in the block instead of being open at both ends." (Id.) Additionally, the examiner determined: "Yamaguchi teaches providing sipes in the block of the tread and specifically suggests sipes each of whose one end

is open to the groove and each of whose other end is closed as being an alternative forms [sic] for sipes." (Id. at page 15.)

Based on these prior art teachings, the examiner determined that the subject matter of appealed claim 13 would have been prima facie obvious within the meaning of 35 U.S.C. § 103. (Id.) We agree.

The appellants argue that JP '917 does not disclose a tire manufactured by vulcanized molding using a mold. (Appeal brief, page 31.) As we discussed above, however, the appealed claims are directed to a tire and not a molding process.

The appellants allege that JP '917 does not disclose "that the blade forms a lateral sipe at a substantially uniform depth..." (Id.) On this point, we agree with the examiner's analysis. (Examiner's answer, page 22.) Here, the appellants do not point to any part of the present specification that would indicate that the term "substantially uniform depth" would not encompass the depths shown in JP '917.

The appellants urge that there is no motivation to combine the references because these references do not disclose the problem solved by the present invention. (Appeal brief, pages 31-32.) As we discussed above, however, the motivation for

combining the references does not have to be the same as that of the appellants.

The appellants argue that "the calfs 5 extend all of the way across the blocks 4 at varying depths creates the presumption that this structure is necessary to provide proper drainage for the tread of JP 917." (Appeal brief, page 32.) However, we find that the examiner has adequately addressed this issue in the examiner's answer. (Pages 20-22.)

Summary

In summary, our judgment in this appeal is as follows:

I. the rejection under 35 U.S.C. § 102(b) of claim 8 as anticipated by Yamaguchi is affirmed;

II. the rejection under 35 U.S.C. § 103(a) of claim 8 as unpatentable over the combined teachings of Yamaguchi and JP '723 is affirmed;

III. the rejection under 35 U.S.C. § 103(a) of claims 5 through 7 as unpatentable over the combined teachings of Yamaguchi and Benson is reversed;

IV. the rejection under 35 U.S.C. § 103(a) of claim 10 as unpatentable over the combined teachings of Yamaguchi, Benson, and JP '723 is reversed;

V. the rejection under 35 U.S.C. § 103(a) of claims 13 and 15 as unpatentable over the combined teachings of JP '108, JP '712, and Yamaguchi is affirmed; and

VI. the rejection under 35 U.S.C. § 103(a) of claims 13, 15, 16, and 18 as unpatentable over the combined teachings of JP '917, JP '712, and Yamaguchi is affirmed.

The decision of the examiner is affirmed in part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

EDWARD C. KIMLIN Administrative Patent Judge	)
TERRY J. OWENS Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
ROMULO H. DELMENDO Administrative Patent Judge	)

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